

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

# PCT

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/IB2004/000976

International filing date (day/month/year)  
31.03.2004

Priority date (day/month/year)  
02.04.2003

International Patent Classification (IPC) or both national classification and IPC  
G02B21/16, G02B21/06, G02B21/00

Applicant  
FRAEN CORPORATION S.R.L.

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

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10/552265

JC20 Rec'd PCT/PTO 30 SEP 2009

International application No.  
PCT/IB2004/000976

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
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**Box No. II Priority**

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1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
- ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

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**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	4,6-13
	No: Claims	1-3,5,14,15
Inventive step (IS)	Yes: Claims	
	No: Claims	1-15
Industrial applicability (IA)	Yes: Claims	1-15
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VI Certain documents cited**

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1. Certain published documents (Rules 43*bis*.1 and 70.10)  
and / or
2. Non-written disclosures (Rules 43*bis*.1 and 70.9)  
**see form 210**

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/IB2004/000976

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1: US-A-6 154 282

D2: WO 01/61324 A

D3: HERMAN P ET AL: "Frequency-domain fluorescence microscopy with the LED as a light source" J. MICROSC. (UK), JOURNAL OF MICROSCOPY, BLACKWELL SCIENCE, UK, vol. 203, pt.2, no. 8, 2001, pages 176-181, XP002290940 ISSN: 0022-2720

D4: SILK E: "LED fluorescence microscopy in theory and practice" MICROSCOPE (USA), MICROSCOPE, MICROSCOPE PUBLICATIONS DIV, USA, vol. 50, no. 2-3, 2002, pages 101-118, XP009034782 ISSN: 0026-282X

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not novel in the sense of Article 33(2) PCT.

2.1 The document D1 discloses (figure 1 and corresponding description) a lighting assembly 12 for a fluorescence microscope 10 comprising a LED light source 14, an optical collimating unit 18. D1 does not mention explicitly a housing of the lighting assembly. However, it is mentioned in the description (col. 4, lines 36-41), that the lighting assembly 12 may replace the standard insert tube used with conventional light sources. Thus, the lighting assembly 12 can be connected to the microscope base. The presence of a housing is considered to be at least implicitly disclosed.

Thus, D1 discloses all the features of claim 1, thereby anticipating the subject-matter of claim 1.

2.2 In a similar manner, the subject matter of claim 1 is anticipated by document D2 (figure 2 and corresponding description) and document D3 (figure 1).

2.3 Even if the subject matter of claim 1 would have been novel, it still lacks an

inventive step in view of each of D1-D3. Furthermore, claim 1 lacks an inventive step in view of D4 (figure 5) and D1 (col. 3, line 66-col. 4, line 14).

3. Dependent claim 2-15 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D1-D5 and the corresponding passages cited in the search report.

**claims 2-7:** lighting assemblies with excitation filters are well known (D1: col. 4, lines 14-18, D4: figures 3 and 4); furthermore, tilted dichroic plates are generally used in fluorescence microscopes (see D1-D3) as well as emission filters (see D3). The features relating to details of the housing structures are considered as being obvious design options.

**claims 8-10,13:** interchangeable filters/dichroic plates/light sources for adaption of the microscope to different wavelengths are common practice in fluorescence microscopy (D1: col. 4, lines 19-51, D2: page 6, line 31-page 7, line 3, D3: page 177, col. 2)

**claims 11-12:** light emitting diodes with integrated optics are well known in the art (see also D1, figure 2)

**claims 13, 14:** the specified devices are anticipated by the fluorescence microscopes of D1-D3.